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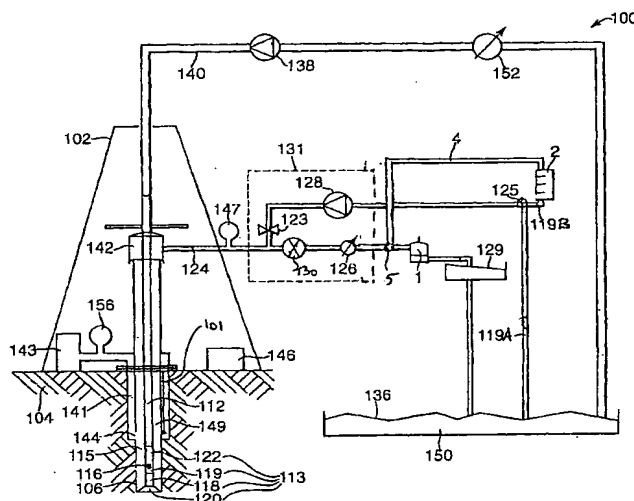
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(54) Title: DRILLING SYSTEM AND METHOD



(57) Abstract: System (100) for drilling a bore hole into an earth formation, comprising: - a drill string (112) reaching into the bore hole leaving a drilling fluid return passage between the drill string and the bore hole inside wall; - a drilling fluid discharge conduit (124) in fluid communication with said return passage (115); - pump means (138) for pumping a drilling fluid through the drill string to said discharge conduit via said return passage; - back pressure means (123, 128, 130) for controlling the drilling fluid back pressure; - fluid injection means (141, 143) comprising supply passage (141) fluidly connecting an injection fluid supply (143) with said return passage and further comprising an injection fluid pressure sensor (156) arranged to measure injection fluid pressure in said supply passage; - back pressure control means (238) for controlling the back pressure means (123, 128, 130) whereby said control means is arranged to regulate the back.



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